UDC 518:517.25

USSR

KONTOROVICH, M. I., KARATYGIN, V. A., and ROZOV, V. A., Leningrad

"Asymptotic Calculations of a Double Integral for the Case of a Stationary Line"

Moscow. Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 10, No 4, Jul/Aug 70, pp 811-817

Abstract: Integrals of the type $\int_S fe^{ik\varphi}ds$ occurring in problems concerning wave diffraction and antenna theory are discussed; it is noted that the approximate calculation of such integrals for large values of the parameter k is ordinarily based on the stationary phase method and leads to expansions in which stationary terms and contour integrals figure. The case in which the phase function φ is extremal not at one point but on a certain curve which is called the stationary line is considered. Integrals of this type are obtained in calculating the spread between rectangular antennas with parallel sides or coaxial parabolic antennas generally speaking, in cases in which the function φ has the sense of the distance between points on parallel curves. The initial integral is reduced to the sum of integrals of slowly varying functions in terms of a stationary line and the sum of integrals over the curve Γ enclosing S.

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1/2 012 UNCLASSIFIED PROCESSING DATE--02OCT72

TITLE--REGULARITIES IN THE STRENGTH DECREASE OF ZEOLITE PELLETS UNDER ACTION OF WATER AND BENZENE VAPORS -U-

AUTHOR-(05)-SLEPNEVA, A.T., LIPKIND, B.A., DUKAREVICH, N.V., KONTOROVICH, S.I., SHCHUKIN, YE.D.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 251-254

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ZEOLITE, WATER, BENZENE, ADSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1553 STEP NO--UR/0069/70/032/002/0251/0254

CIRC ACCESSION NO--AP0112547

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 012
CIRC ACCESSION NO--AP0112547
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF MOISTENING BY WATER AND BENZENE VAPORS ON THE STRENGTH OF THE SAMPLES OF KAOLINITE CLAY AND ZEOLITES NAA AND NAX, CONTAINING 20PERCENT CLAY AS BINDING AGENT, HAS BEEN STUDIED. MOISTENING OF CLAY AND ZEOLITE SAMPLES INVOLVES A STRENGTH DECREASE ASSOCIATED WITH THE LOWERING OF THE FREE SURFACE ENERGY DURING ADSORPTION. THE SORPTION OF WATER AND BENZENE MOLECULES BY INTERNAL CAVITIES OF ZEOLITE CRYSTALS REDUCES THE STRENGTH DECREASE IF THE LIQUID CONTENT DOES NOT EXCEED 10-20PERCENT OF THE ADSORPTION CAPACITY OF ZEOLITES.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--INTERNAL STRESSES IN THE STRUCTURES OF HYDRATION HARDENING OF MINERAL BINDING MATERIALS -U-

AUTHOR-(03)-KONTOROVICH, S.I., MALIKOVA, ZH.G., SHCHUKIN, YE.D.

COUNTRY OF INFO--USSR

SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 2, PP 224-228

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--MINERAL, INTERNAL STRESS, CALCIUM OXIDE, MAGNESIUM OXIDE, CRYSTALLIZATION, CRYSTAL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0769 STEP NO--UR/0069/70/032/002/0224/0228

CIRC ACCESSION NO--AP0108970

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108970

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A ROENTGENOGRAPHIC STUDY HAS BEEN MADE OF THE EFFECT OF SOME PHYSICO CHEMICAL FACTORS ON THE VALUE OF INTERNAL STRESSES OF THE SECOND KIND ARISING DURING HYDRATION HARDENING OF MAGNESIUM AND CALCIUM OXIDES. DECREASE OF THE W-S RATIO AND OF THE PARTICLE SIZE OF INITIAL BINDING MATERIAL INCREASES MICROSTRESSES, WHEREAS ADDITION OF A FILLER, OF CRYSTALLIZATION SEEDS AND ELECTROLYTE DIMINISHES MICROSTRESSES IN CRYSTALLIZATION STRUCTURES.

UNCLASSIFIED

USSR

UDC: None

KONTOROVICH, V. M. and SAPOGOVA, N. A.

"Exactly Solvable Model of the Kinetic Equation and Sound Absorption in Metals"

Leningrad, Fizika Tverdogo Tela, vol 15, No 3, 1973, pp 689-694

Abstract: In connection with the propagation of sound waves along the axis of a cylindrical Fermi surface, the authors consider the limiting case of dispersion, in impurities, in which the kinetic equation can be given an exact solution in a metal of arbitrary anisotropy. It is assumed, in this theoretical investigation, that the radius of action of the forces is limitedly small, much smaller than the interatomic distance, the deBroglie wavelength of the electron, and the distance at which the amplitude of the Bloch function varies in amplitude. The interaction of the electrons and the sound can then be described by the δ function potential at which the integral operator of the kinetic equation becomes degenerate and reduces to an algebraic operator. The solution to this equation is expressed through the Green function of the differential equation involving the relaxation time. In the second part of this article, the solution is applied to an investigation of the absorption and dispersion of the sound waves.

1/1

USSR

UDC 621.385.6

GAPLEVSKIY, V. V., KONTOROVICH, V. M.

"Application of Symmetry Theory to the Study of Degenerate Mode Splitting in Magnetron Resonators"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XIV, No 12, 1971, pp 1906-1917

Abstract: A study was made of the splitting of degenerate natural frequencies and the azimuthal structure of the high frequency field of a magnetron resonator system formed by a chain of N resonators formed into a ring as a function of the properties of symmetry of the disturbance introduced by local inhomogeneities and the electron flux. The analysis is performed on the basis of group theory [L. D. Landau, et al., Kvantovaya mekhanika, Fizmatgiz Press, Moscow, 1963; D. M. Kerns, J. Res. Natn. Bur. Stand., No 46, 267, 1951], which permits it to be performed in a sufficiently general form.

In the general case, the field structure is represented by superposition of the standing and traveling waves, the relative amplitudes of which are determined by the matrix elements of the disturbance operator.

The symmetry properties of the magnetron resonator system, removal of degeneration by disturbances of defined symmetry, the matrix elements of the

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USSR

GAPLEVSKIY, V. V., et al., Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XIV, No 12, 1971, pp 1906-1917

disturbance in the presence of symmetry, splitting of the frequencies and the field structure for different disturbances of the system, and the specific form of the disturbance operator are considered. In the presence of a rotating electron flux, when the symmetry with respect to time reversal is disturbed, the natural oscillations are described by wave traveling in opposite directions. Under the simultaneous effect of these disturbances, the structure of the high frequency field is a superposition of the traveling and standing wave, which must be considered when determining the magnitude of the coupling of the resonator system to the magnetron load at each of the two split frequencies.

2/2

1/2 029 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--STIMULATED SCATTERING OF LIGHT BY SURFACE WAVES -U-

AUTHOR-(03)-GAVRIKOV, V.K., KATS, A.V., KONTOROVICH, V.M.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 4, PP 1318-1331

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LIGHT SCATTERING, SURFACE WAVE, CRYSTAL SURFACE, INCOMPRESSIBLE FLUID, LIGHT PULSE, LIGHT POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1491 STEP NO--UR/0056/70/058/004/1318/1331

CIRC ACCESSION NO--AP0106247

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R001401430005-3"

2/2 029 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106247

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STIMULATED SCATTERING BY CAPILLARY WAVES ON THE SURFACE OF AN INCOMPRESSIBLE FLUID OR BY RAYLEIGH WAVES ON THE SURFACE OF AN ISOTROPIC SOLID BODY WITH SMALL OPTICOELASTIC MODULII IS INVESTIGATED. BOTH LONG AND SHORT PULSES ARE INVESTIGATED, AND IT IS SHOWN THAT THE THRESHOLD APPRECIABLY DEPENDS ON THE PULSE DURATION. CASES OF BOTH LOW AND HIGH TEMPERATURES ARE CONSIDERED FOR SCATTERING BY RAYLEIGH WAVES. THE DEPENDENCE OF THE STIMULATED SCATTERING THRESHOLD ON THE ANGLE OF INCIDENCE AND POLARIZATION OF THE INCIDENT LIGHT AND PROPERTIES OF THE SCATTERED RADIATION NEAR THE THRESHOLD ARE ANALYSED. THE POSSIBILITY OF OBSERVING THE EFFECT IN A SOLID BODY OR LIQUID IS DISCUSSED. FACILITY: INST. RADIOFIZIKI I ELEKTRONIKI, AN UKR. SSR.

UNCLASSIFIED

Automatic Control: Instruments

USSR UDC: 64:621.435.2.002.8

KONTOROVICH, V. P., Candidate of Technical Sciences

"Automated Acoustic Inspection of Electromagnetic Devices in Mass Production"

Moscow, Mekhanizatsiya i Avtomatizatsiya Proizvodstva, No 1, Jan 74, pp 27-28

Abstract: The level and spectrum of the acoustic noise generated by electromagnetic devices during operation is taken as an information index for quality control of such devices in mass production. These noise parameters depend on structural design, manufacturing techniques, overall dimensions, and the electrical and magnetic quantities characterizing the given type of equipment. An automated sorter is described which consists of a unit for feeding finished items to the inspection point, a measurement device, a decision-making unit, and a device for implementing the decision.

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USSR

UDC: 621.391.883.2

KONTOROVICH, V. Ya.

"On the Necessary Accuracy for Completion of Nonlinear Transformations in Signal Reception Against a Background of Powerful Non-Gaussian Interference"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-t svyazi. Vyp. 3 (Materials of the Scientific and Technical Conference of Leningrad Electrical Engineering Institute of Communications--collection of works, No 3), Leningrad, 1971, pp 146-149 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3A70)

Translation: Relations are found for estimating the increase in variance when interference is filtered by a noise restoration and subtraction unit in the case where the interference distribution law is not known a priori. Resumé.

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UDC 546.3.019.941

USSR

KONTOROVSKIY, A. Z., Candidate of Technical Sciences

"Review of V. N. Gulyayev's Book - Metal in Heat and Power Units"

Moscow, Teploenergetika, No 10 Oct 70, p 92

Abstract: A book by V. N. Gulyayev entitled "Metall v Teploenergeticheskikh Ystanovkakh" (Metal in Heat and Power Units) is reviewed.

Chapter 1 gives the general characteristics of steels used in heat and power engineering.

Chapter 2 examines materials used in the manufacture of boiler drums.

Chapter 3 discusses materials used for boiler and pipeline heating. Specifically, the structure and properties of 12Kh1MF, 15Kh1M1F and 12Kh2MFSR peaolitic steels, 12% chromium steels of the ferrite-martensite class, and a large number of austenitic grades are discussed.

Chapter 4 deals with the properties of materials used in the manufacture of brackets.

USSR

KONTOROVSKIY, A. Z., et al., Teploenergetika, No 10, Oct 70, p 92

Chapters 5-8 are devoted to materials for cast parts and turbines.

Chapter 9 examines the properties of steel substitutes, i.e., materials such as manganese, which can be used to replace the nickel in steels while still maintaining or increasing heat resistance and improving structure.

Chapter 10 discuss materials used for manufacturing those components which are subject to extreme wear and discusses measures for lowering wear and increasing the wear resistance of these components.

Chapters 11-13 are concerned with metal damage and measures to prevent such cases, methods of testing the metal of individual components during operation, and means of extending the service life of heating and power units.

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1/3 025 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STRUCTURAL CHANGES DURING PROLONGED AGING OF LOW ALLOY TUBE STEELS -U-

AUTHOR-(02)-KONTOROVSKIY, A.Z., RIVLIN, A.M.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (3), 66-68

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--LOW ALLOY STEEL, ALLOY DESIGNATION, METAL TUBE, METAL HEAT TREATMENT, ELECTRON MICROSCOPE, METAL AGING, TEMPERING/(U)ST20 CARBON STEEL, (U)12KHIMIF LOW ALLOY STEEL, (U)15KHIMIF LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0936 STEP NO--UR/0129/70/000/003/0066/0068

CIRC ACCESSION NO--AP0133023

UNCLASSIFIED

2/3 025 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133023

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE CHANGES WERE STUDIED IN STEELS 20, 12KHIMF, AND 15KHIMIF (C 0.23, 0.10, 0.16; SI 0.31, 0.31, 0.32; MN 0.40, 0.50, 0.69; S 0.023, 0.015, 0.016; P 0.02, 0.022, 0.02; CR -, 1.05, 1.23; MO -, 0.35, 1.12; AND V -, 0.28, 0.29 WT. PERCENT). STEEL 20 WAS HEAT TREATED IN TWO WAYS (1) ANNEALED (40 MIN AT 920DEGREES) AND (2) NORMALIZED (40 MIN 15 920DEGREES) WITH TEMPERING (2 HR AT 600-50DEGREES). STEEL 12HIIMF WAS (1) NORMALIZED 45 MIN AT 960-70DEGREES AND TEMPERED 5 HR AT 740DEGREES, (2) QUENCHED IN OIL AFTER 45 MIN AT 960-70DEGREES AND TEMPERED 5 HR AT 740DEGREES. STEEL 15KHIMIF WAS (1) NORMALIZED 45 MIN AT 1050-60DEGREES AND TEMPERED 5 HR AT 745DEGREES, (2) QUENCHED IN OIL AFTER 45 MIN AT 1050-60DEGREES AND TEMPERED 15 HR AT 745DEGREES. STEEL 20 WAS AGED 5000 HR AT 450DEGREES OR 2000 HR AT 500DEGREES, STEEL 12KH1MF AND 15KH1M1F WERE AGED 5000 HR AT 585DEGREES OR 2000 HR AT 625DEGREES. SPECIMENS AGED WITHOUT STRESS AND AFTER TESTING FOR LONG RANGE STRENGTH WERE STUDIED UNDER THE ELECTRON MICROSCOPE. THE STRUCTURE OF STEEL 20 AFTER AGING CHANGED (PARTICULARLY DURING THE 1ST 500-1000 HR) FROM LAMELLAR PEARLITE INTO FERRITE AND CEMENTITE. THE LATTER COAGULATED AND ASSUMED OVAL AND GLOBULAR SHAPE. DURING AGING MICROCRACKS FORMED AT THE INTERFACE PEARLITE FERRITE, WHICH DEVELOPED INTO PORES AND FINALLY CAUSED DISINTEGRATION. THE STRUCTURE OF STEEL 12KH1MF AFTER HEAT TREATMENT CONSISTED OF FERRITE AND CARBIDE. THE AGING FOR 5000 HR AT 585DEGREES CAUSED FORMATION OF COARSE PARTICLES ALONG GRAIN BOUNDARIES. HEAT TREATMENT OF STEEL 12KH1MF ACCORDING TO METHOD NO. 2 GAVE A MORE STABLE STRUCTURE.

UNCLASSIFIED

3/3 025 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0133023
ABSTRACT/EXTRACT--THE STRUCTURE OF STEEL 15KH1M1F SUBJECTED TO HEAT TREATMENT CONDITIONS NO. 1 AND 2 AFTER AEING UNDERWENT GREATER STRUCTURAL CHANGES THAN STEEL 13KH1MF AFTER TREATMENT NO. 2. THE DISINTEGRATION OF STEELS 12KH1MF AND 15KH1M1F WAS INITIATED AT THE SURFACE OF COARSE CARBIDE PARTICLES, WHILE IN STEEL 20 THE DISINTEGRATION STARTED AT THE BOUNDARY BETWEEN FERRITE AND PEARLITE GRAINS. FACILITY: VSES. INST. PROEKT. ORG. ENERG. STROITEL., USSR.

UNCLASSIFIED

KONTRIDZE, F.M.

SO: JPRS 53378
16 June 71

UDC: 616.895.8

PECULIARITIES OF SET, THEMATIC AND ATHEMATIC APPERCEPTION IN SCHIZOPHRENIA

[Article by F.M. Kontridze, M.G. Nadirashvili, S.V. Tsuladze, Institute of Psychiatry imeni D.N. Uznadze, Georgian Ministry of Health, Tbilisi; Moscow, Zhurnal Akademii Meditsinskikh Nauk SSSR, Russian, No 5, May 1971, pp 15-17]

Investigation of personality deals with different aspects but, at the same time, it must be noted that the pathopsychological and pathopsychonological findings of the last few years indicate that personality cannot be considered as the aggregate of different mental functions. It is something that is an entity. The link between different mental functions and the environment is mediated by the entire personality, and this determines the structural uniqueness of behavioral acts in the broadest sense. Therefore, the position is definitely valid that mental disease is not a pathology of some individual function rather that it is a disorder of the integral personality.

The choice of adequate investigations is very important in the study of personality manifestations under pathological conditions. From this point of view, we have to consider popular methods in psychology and psychiatry such as the method of fixed set, according to D.N. Uznadze, and so-called projection (or projective) methods.

Clinico-experimental observations indicate that one of the chief conditions for adaptation to the environment is set, or the condition that precedes action. Set, according to D.N. Uznadze, is the initial reaction to a situation. Need and the corresponding objective conditions are the chief factors in initiation of set. In the case of repeated exposure to extrinsic stimuli, set may be fixed, assuming the form of so-called fixed set.

In the course of evolutionary formation of higher nervous activity it underwent a number of qualitative changes; for example, while in animals set is formed through instincts and appears thereafter in the form of automated behavior, which is what creates an "impulsive" or "timely" plan of mental life, in man it is formed at the objectivation level. This higher level of set is characterized not only by the presence of a situation but also categories of ideation, by social and moral principles.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R001401430005-3"

USSR

KONTRIMAVICHUS, V. L., director, Institute of Biological Problems of the North, Far East Scientific Center, Academy of Sciences USSR

"The Northernmost Front of Science"

Moscow, Sovetskaya Russiya, 25 Aug 72, p 2

Abstract: Responding to an interview, the director of the Institute of Biological Problems of the North describes the climatic severity and the great wealth of natural resources in polar regions of the USSR and the present status and plans of polar biological research. Information on and utilization of polar regions are at present greater in the USSR than for any other country. Polar regions are particularly useful for biological research due to ecological simplicity and rapidity of biological processes, which facilitate computer modeling of ecosystem function. Laboratories presently being set up are studying population ecology, population genetics, community ecology, evolution, and adaptation. Studies on lemmings at Shmidt Cape and on the endangered white goose on Wrangel Island are underway. Human impact on polar ecology and the use, protection, and enrichment of natural resources are also under study. In addition to providing shelter, there is a need for supplying inhabitants with recreation facilities for better adaptation to life and work in the North.

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USSR

UDC 550.831

PIMSHTEYN, I. G., KONTSENEBIN, Yu. P.

"Use of the Method of Electrostatic Induction for Transformation of Gravitational Fields"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Geologiya i Razvedka, No 9, 1972, pp 102-106.

Abstract: This article demonstrates the possibilities of the method of modeling of gravitational fields by electrostatic induction for the solution of practical problems, using the solution of a specific problem as an example. Results produced are compared with results of transformation of fields on a type S-1 special device, as well as by the manual method. The results of preliminary experiments on the resolution of gravitational fields by electrostatic induction indicate that a compact and simple modeling device should be created on the basis of such an installation, allowing rapid production of a three-dimensional apparatus for conversion and resolution of gravitational fields with accuracies sufficient for practice.

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USSR UDC 616.61-002.151-022.6-008.9

KONTSEVAYA, N. G., KONSTANTINOV, A. A., SHAPIRO, S. Ye., and KOVAL'SKIY, G. S., Khabarovsk Medical Institute

"Some Indices of Protein Metabolism and Vitamin Balance in Patients With Far-Eastern Hemorrhagic Fever With a Renal Syndrome"

Moscow, Voprosy Meditsinskoy Khimii, Vol 16, No 4, Jul/Aug 70, pp 376-381

Abstract: A study was made of 269 patients suffering from Far-Eastern hemorrhagic fever with a renal syndrome. During the first 3 weeks of the illness, a high degree of azotemia is present which is caused by the specific tissue processes as well as by the disturbance of kidney function. The increased porosity of vascular walls accounts for the hemorrhagic syndrome. The decomposition of tissue proteins, vomiting, and dehydration which are characteristic of the syndrome are conditioning factors in the extra-renal azotemia. The content of amino acids and proteins in serum is distorted. Loss of water-soluble vitamins C and P is not compensated by their administration, an indication that the condition is endogenous. Oliguria (200-300 ml per day) or even anuria during the first week is followed by polyuria the second week (6,000-8,000 ml), but elimination of urea nitrogen is still below normal.
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USSR

KONTSEVAYA, N. g., et al, Voprosy Meditsinskoy Khimii, Vol 16, No 4, Jul/Aug 70, pp 376-381

It is believed that the disproteinemia, which involves all proteins, tyrosine, tryptophan, xanthurenic acid, and vitamins C and P, is caused by a disturbance in the proteolytic enzyme system, since some distortion remains even during the convalescent period in the fourth week.

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1/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DISORDERS OF THE SEROTONIN METABOLISM IN CIRRHOSIS OF THE LIVER -U

AUTHOR-(03)-GELLER, L.I., KOZLOVA, Z.P., KONTSEVAYA, N.G.

COUNTRY OF INFO--USSR

SOURCE--SOV MED 33(3): 19-21. 1970.

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIVER, CIRRHOSIS, SEROTONIN, METABOLISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605004/E04 STEP NO--UR/0399/70/033/003/0019/0021

CIRC ACCESSION NO--AP0139661

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139661

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATIONS MADE IN 34 PATIENTS WITH LIVER CIRRHOSIS WHICH DEVELOPED AFTER EPIDEMIC HEPATITIS (ACUTE VIRAL HEPATITIS) SHOWED A CONSIDERABLE FALL OF SEROTONIN BINDING PROPERTIES OF THE BLOOD SERUM BY COMPARISON WITH HEALTHY PERSONS. IN LIVER CIRRHOSIS WITH ESOPHAGEALGASTRIC HEMORRHAGES STEMMING FROM PORTAL HYPERTENSION PREVAILING IN THE CLINICAL PICTURE, THE DEGREE OF AN INCREASED BLOOD SERUM MONOAMINOXIDANSE ACTIVITY AND URINARY EXCRETION OF THE BASIC METABOLITESEROTONIN (5,OXYINDOYL ACETIC ACID) IS SUBSTANTIALLY GREATER THAN IN PATIENTS SUFFERING FROM LIVER CIRRHOSIS WITH MARKED HEPATIC INSUFFICIENCY WITHOUT NOTICEABLE PORTAL HYPERTENSION. IT IS TO BE PRESUMED THAT DISTURBED SEROTONIN METABOLISM PLAYS A DEFINITE ROLE IN THE DEVELOPMENT AND PROGRESSING HEMORRHAGES OF PORTAL GENESIS IN PATIENTS WITH LIVER CIRRHOSIS. ATTEMPTS AT CLINICAL APPROBATION OF ANTISEROTONIN PREPARATIONS IN LIVER CIRRHOSES WITH PORTAL HYPERTENSION SHOULD BE CONSIDERED FULLY JUSTIFIABLE. FACILITY: NARUSHENIYA OBMENA SEROTONINA SEROTONINA PRI TSIRROZE PECHENI.

UNCLASSIFIED

13

USSR

UDC 669.245.018.44(088.8)

PANASYUK, I. O., BRUSILOVSKIY, B. S., VILKOV, V. I., VORONIN, G. M., YEGOROV, YE. YE., YELKIN, I. S., KLIMOV, L. YA., KOVROVA, YE. A., KOVTSEVAYA, YE. M., LYUBINSKAYA, M. A., MILENINA, YE. G., MIKHAYLOV, I. A., RAZUVAYEV, YE. I., SIROTKIN, A. I., SOLDATCHENKO, V. A., SPILITSIN, R. I., SHAPIRO, S. M.

"Nickel-Chromium Base Alloy"

USSR Author's Certificate No 276418, Filed 2 Jun 69, Published 16 Oct 70 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I766P)

Translation: The heat-resistant alloy has the following composition (in %): C 0.03-0.1, Cr 30-40, W 3-5.5, Mo 2-4, Ti 0.5-1.5, Al 0.5-1.5, Nb 0.5-1.5, Ce 0.01-0.3, B 0.003-0.008, Ni, the rest. The alloy has increased heat resistance and also the following mechanical and physical-chemical properties at 1,100°: σ_B 8 kg/mm^2, δ 65%, σ stress-rupture 1 kg/mm^2, coefficient of linear expansion $15 \cdot 10^{-6}$ deg^{-1}, increase in weight after 100 hours of heating at 1,200° in the air 0.6 g/m^2. It is corrosion-resistant in a moist atmosphere under tropical conditions, in sea water, and in the products of combustion of highly sulfurous fuel.

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USSR

UDC: 621.396.6:621.315.5

LEVITIN, I. B., KHARLAMOVA, T. Ye., KONTSEVICH, A. I.

"Effective Emissibity of Some Electrovacuum Metals"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific and Technical Collection. Materials), 1970, vyp. 3, pp 16-19 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V417)

Translation: In connection with the introduction of non-contact methods of studying temperature fields in electronic radio equipment, it is necessary to have information on the emissivity of the different materials used, in particular for electrovacuum metals. In this paper, the authors have measured the effective emissivity of Ta, Nb, Ni, Mo, Ti and Kovar and the temperature dependence of emissivity in the 40-200°C temperature range. The measurements were made with the IKR-1 radiometer, using a plate covered with a dense thin film of soot from burning transformer oil as the conventional black reference body. The measurement results given show that the effective emissivity for all the above-mentioned metals increases with rising temperature, the increase being chiefly linear with the exception of titanium. Two illustrations, one table, bibliography of 13 titles. N. S.

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Acc. Nr: AP0051928

Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, pp 98-100

THE EFFECT OF SOME VEGETOTROPIC POISONS ON THE MITOTIC ACTIVITY OF THE REGENERATING EPITHELIUM IN GASTRIC MUCOSA

~~V. M. Konisevoy~~

Vitebsk Medical Institute

Atropine, aceclidine, phentolamine, mesaton, hexamethonium and dimecoline were given every 12 hours for 5 days to rats with a preliminarily inflicted standard damage of gastric mucosa. Control animals received 0.9% solution of NaCl. A mitotic index for the epithelial cells of the regenerate was then determined. Introduction of hexamethonium was found to produce lowered mitotic activity of the cells in the stated above population which led to inhibition of repairement processes in the damaged gastric mucosa.

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19820411

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USSR UDC: 621.385:530.145.6:623.317.17

KONTSEVOY, Yu. A., REZVYY, R. R., GOLOLOBOV, V. M., and KUDRYAVTSEV, Ye. N.

"Ellipsometric Control Methods Using a Laser"

Elektron. tekhnika. Nauchno-tekhn. sb. Upr. kachestvom i standartiz. (Electronic Engineering, Scientific-Technical Collection, Quality and Standardization Control) 1970, No. 2, pp 115-122 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D393)

Translation: A description is given of laser ellipsometric microscopes with beam incidence angles of 45 and 70°, designed for nondestructive control of thickness and refraction indices of fine transparent dielectric layers on the surface of semiconductors, as well as for measurement of the uniformity of these parameters. A system is given of graphic solution for an exact ellipsometry equation for germanium and silicon specimens. The utilization areas of ellipsometers are examined. Resume

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1/2 049 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--MONITORING THE QUALITY OF POLISHED SURFACES BY MEANS OF A GAS LASER -U-

AUTHOR-(02)-KONTSEVOY, YU.A., REZVY, R.R.

COUNTRY OF INFO--USSR

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DATE PUBLISHED-------70

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TOPIC TAGS--METAL POLISHING, SILICON, GAS LASER, COHERENT LIGHT, SEMICONDUCTOR MATERIAL

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UNCLASSIFIED

2/2 049 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124077

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF MONITORING THE QUALITY OF POLISHED SURFACES OF VARIOUS KINDS, INCLUDING METALLIC AND SEMICONDUCTING SURFACES, BY MEANS OF A GAS LASER IS DESCRIBED. THE QUALITYIS ESTIMATED BY OBSERVING OR PHOTOGRAPHING AN IMAGE OF THE TEST SURFACE IN THE REFLECTED COHERENT LIGHT OF THE LASER AND ANALYSING THE CHARACTERISTIC PATTERNS FORMED IN THE IMAGE. A TYPICAL EXAMPLE IS PRESENTED FOR A POLISHED SI PLATE.

UNCLASSIFIED

USSR

UDC 621.382.2/3

KONTSEVOY, YU. A., KOLTUN, M. M. and TATARENKOV, A. I.

"Polishing Quality Control Instrument for Semiconductor Plates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 67, Author Certificate No 258463 Class 21g.

Abstract: This author certificate introduces an instrument for quality control of semiconductor plate polishing. The instrument consists of light source, a device for light focusing and modulation, a diaphragm and means for photosignal recording. To increase sensitivity, the instrument is provided with a means of multiple ultra-violet-light reflection, consisting of a set of mirror polish plates of the same material as the material to be tested, and a selective photocamera, whose maximum spectral sensitivity coincides with the spectral interval of the reflection peak of the tested semiconductor material.

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Acc. Nr.: AA0040535 Ref. Code: UR0482

TPRS 52248
UDC 621.382.2/3

USSR

KONTSEVOY, YU. A., KOLTUN, M. M. and TATARENKOV, A. I.

"Polishing Quality Control Instrument for Semiconductor Plates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 67, Author Certificate No 258463 Class 21g.

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Reel/Frame
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KONTSOV, A.S.

J-9979 82

CHANGES IN THE FUNCTIONAL STATE OF THE BODY AMONG THE FLIGHT PERSONNEL OF THE MILITARY TRANSPORT AVIATION (pp 59-60)

By Lieutenant Colonel Medical Service E. V. Kurdyavev,
Candidate of Medical Sciences,
Major Medical Service V. S. Kompaneets,
Lieutenant Colonel Medical Service A. S. Kontsov,
Lieutenant Colonel Medical Service G. S. Levchuk,
and Major Medical Service A. I. Ignat'yev

The modern technical equipment of the VTA (Voyenno-transportnaya aviatsiya, military transport aviation) has considerably broadened its tactical possibilities. Naturally, this has changed the conditions of its professional activities and led to stricter requirements concerning the working capability of the personnel of the flight crews. Of late, works were published dedicated to the medical study of the working conditions and way of life of VTA flight personnel. Thus, as a result of clinical-psychological and hygienic studies of VTA flight activities, a number of authors have provided medical descriptions and described the specific characteristics of long-distance flights (F. I. Gurvich, Yu. V. Bondarev, V. A. Yegorov, V. L. Marishchuk, V. L. Ovchinnikov, V. V. Kassvetayev, F. F. Vokhmyanin, 1969, and others).

The object of our study was the influence of average-length flights on the body of the flight personnel. To this effect, we studied 42 members of flight crews who displayed no deviations in their state of health. They were in the 20-39 years age group with two to 18 years of flight experience. The studies were made before the flights and 30-40 minutes after landing (in the spring-summer period). The flights took place in simple weather conditions at a 3,000-5,000 meters altitude. Take-off and landing took place at the base airfield. The influence of the flights on the state of the body was evaluated through studies of the nervous and cardiovascular systems and through laboratory data.

With a view to evaluating the dynamics of nervous processes (capability to concentrate and divide the attention), we used the intermittent flashing of numbers test. We determined a steady increase in the number of errors after flights, averaging 0.52 compared with the starting data ($r = 0.02$; M initial = 1.02; henceforth the average value of starting data will be marked by M); the overall time was increased insignificantly (by three seconds). The attention span was determined with the help of the correctional method involving the use of Landolt rings. The number of

Military Medical Journal no 8
Aug 71

USSR

UDC: 532.529.5/.6

KONTUSH, S. M., ROMANOV, K. V.

"Formation of a Jet of Monodisperse Drops When Gas is Blown Through a Thin Layer of Liquid"

Fiz. aerodispers. sistem. Mezhved. nauch. sb. (Physics of Aerodisperse Systems. Interdepartmental Scientific Collection), 1971, vyp. 4, pp 38-43 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B511)

Translation: A diagram is proposed for a monodisperse aerosol generator based on the formation of droplets when gas bubbles collapse. A thin layer of liquid is applied to a solid surface with an air supply channel giving out onto the surface. Excess pressure in the air channel produces an air bubble which collapses as its diameter becomes equal to the thickness of the liquid layer. The resultant "tongue" throws out several drops which are borne outward. This process is periodically repeated, resulting in continuous drop formation. Conditions for formation of a jet of monodisperse drops are considered. An elementary theoretical model is proposed for the phenomenon. The paper describes the results of a study of the operation of a generator of monodisperse drops from 6 to 30 μ in

USSR

KONTUSH, S. M., ROMANOV, K. V., Fiz. aerodispers. sistem. Mezhved. nauch. sb., 1971, vyp. 4, pp 38-43

diameter at drop velocities of 0.5-3 $m \cdot s^{-1}$ and a prf of 7-10 Hz. The parameters of generator operating conditions are given. Bibliography of ten titles.

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USSR

UDC: 51

KONURBAYEVA, B. M.

"Quasistrategies in Positional Games on Graphs"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collected Works. Institute of Mathematics, Siberian Department of the Academy of Sciences of the USSR), 1971, vyp. 2(19), pp 74-89 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V430)

Translation: The author considers positional games set up on arbitrary finite oriented acyclic graphs. The quasistrategy of games of a player is the set of final positions of the graph of the game which conform to conditions of consistency, i. e. there exists a mixed strategy of a player such that the probabilities of reaching final positions under conditions of application of this strategy coincide with the probabilities set by the quasistrategy. A theorem is proved on the equivalence of any mixed strategy of a player to some quasistrategy of this strategy. Ye. Yanovskaya.

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USSR

UDC: 539.292

ZHDANOV, V. A., KONUSOV, V. F., and ZHUKOV, A. V., Institute of Applied Mathematics and Mechanics, Tomsk State University

"Computing the Mechanical Stability of Iron, Molybdenum, and Tungsten Crystal Lattices"

Tomsk, Izvestiya VUZ -- Fizika, No 10, 1972, pp 74-78

Abstract: This paper is one of a series dealing with a method of investigating the behavior of crystal lattices under conditions of arbitrary system voltage, all of which have appeared in the journal named above. The preceding articles of the series are briefly reviewed, and their general purport is summed up in the statement that tangential stresses in which the orthorhombic symmetry of the lattice is preserved are most dangerous for the lattice stability. The tensor equations of state are derived for the class of body-centered cubic lattices, to which iron, molybdenum, and tungsten belong. A table is given of the lattice parameters, involved in these equations, for the three metals, and a second table provides critical stability values for these three metals for the case of shifts preserving the tetragonal symmetry of the crystal lattice. Results of the analysis are also given in the form of curves.

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RAN//R.760/5-HKR '73
Dec 72

(3)

Zhdanov, V. A., and V. F. Konusov.
On the theory of air equation of state for solids. IN: Itogi issledovaniy po fizike, 1917-1967. Tomsk. Tomskiy universitet. 1971, 87-102. (RZhKh, 10/72, no. 10B577)

Consideration is given to the general properties of equations of state derived in terms of quasi-harmonic approximations of crystal lattices under the effect of mechanical stresses of an arbitrary type. The influence of lattice symmetry on the form of the equations of state is clarified, as well as that of the binding forces. A study is made of the critical states of crystal lattices prior to mechanical failure. Results of research on a series of specific crystals are discussed.

Malyshev, V. V. Equation of state for uranium hexafluoride over a wide range of state parameters. Atomnaya energiya, v. 32, no. 4, 1972, 313.

Experimental data on saturated vapor pressure P_s, densities ρ_v and ρ_l of UF_6 vapor and liquid at equilibrium are approximated by the equations

$$\lg P_s\,(bar) = 10{,}5153 - 2344{,}4/T - 0{,}013624T + 1{,}0347 \cdot 10^{-5} T^2; \quad (1)$$

$$\rho_v\,(g/cm^3) = 1{,}360 - 0{,}2520\Theta - 0{,}0211\Theta^2 + 0{,}00500\Theta^3; \quad (2)$$

$$\rho_l\,(g/cm^3) = 1{,}368 + 0{,}0010\Theta + 0{,}2757\Theta^2 + 0{,}09875\Theta^3 + 0{,}01677\Theta^4 - 0{,}00102\Theta^5, \quad (3)$$

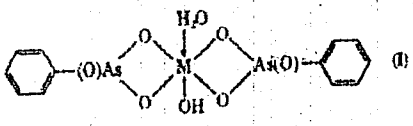
where

$$\Theta = (504{,}5 - T)^{1/3}; \quad (4)$$

KONUSOV, V. F.

Acc. Nr: AP0048936 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code: USA 0025

104501s Reaction of niobium and tantalum with phenylarsonic acid. Tsykhanskii, V. D.; Nazarenko, V. A.; Sheregina, N. I.; Kogusova, V. A. [Inst. Geochem., Irkutsk, USSR]. *Zh. Anal. Khim.* 1970, 25(1), 97–102 (Russ). When Nb and Ta phenylarsonates are formed under conditions eliminating the hydrolysis of the metal ions, the ppt. has a compn. corresponding to the formula I. In practice, when the pptn. is carried out by heating the solns. the ppts. are contaminated with hydrolysis products, esp. when the concns. of the substances eliminating the hydrolysis are insufficient. The coordinating Nb and Ta ions in their phenylarsonates are the 4 charged $M(OH)^{4+}$ cations and the coordinated ions are the doubly charged anions of phenyl-



(I)

arsonic acid. The soly. products for Nb and Ta phenylarsonates are 8.02×10^{-67} and 7.34×10^{-61}, resp. (ionic strength = 1.0, 25 ± 1°).

Chaim Weiner

1/1

REEL/FRAME 19800708

7 Pt

USSR

UDC: 621.791.76:621

SOROCHINSKIY, A. P., Candidate of Technical Sciences, KONVISHER, B. YA., RYNDENKO, V. V., and CHERNYY, A. SH., Engineers, Planning-Design Bureau of Electrohydraulics, Nikolayev

"Welding by the Electric Exploding of the Conductor"

Kiev, Avtomaticheskaya Svarka, No 9, Sep 73, pp 54-56

Abstract: Welding by the electric exploding of the conductor involves the following: electric energy is fed from the storage device (a capacitor bank) to current conductors where a wire explodes and forms a powerful shock wave which moves in a radial direction. Under the effect of the shock wave, the element being welded deforms and moves at a high rate of speed towards the surface of the fixed element. Welding takes place during the collision of the elements. Good joints were produced from sufficiently plastic uniform and differing materials. Factors which affect weld quality are indicated.

1/1

USSR UDC 543.70

CHERKESOV, A. I., ARGISHEVA, A. I., ASTAKHOVA, N. K., KONYAKHINA, A. A., Saratov State Pedagogic Institute

"Spectrophotometric Study of Complex Formation of Thorium with Bromophthalexon-S and n-Xylenolphthalexon-S"

Ivanovo, Izvestiya Vysshikh Uchebnykh Zavedeniy, Khimiya i Khimicheskaya Tekhnologiya, Vol XIV, No 7, 1971, pp 999-1002

Abstract: Oxyaminopolycarboxylic acids of the triphenylmethane series are widely used in analytical chemistry as reagents for the ions of many metals [V. G. Brudz', et al, Trudy IRYeA, No 30, 145, 1967]. A study is made here of the complex formation of thorium with new representatives of this series of compounds: 3,3'-bis'N,N'-di(carboxymethyl)aminomethyl-5,5'-dibromosulfophthaleine (bromophthalexon-S — I) and 3,3'-bis-N,N'-di(carboxymethyl)aminomethyl-xylenolsulfophthaleine(n-xylenolphthalexon-S — II). The study was performed spectrophotometrically. A ratio of Th:I = 1:1 was established for pH 1.5-3.0; Th:II = 1:1 for pH 1.8-3.0 and Th:II = 1:2 for pH 4-6. The molar absorption coefficients and pK of the provisional instability constants of the thorium complexes are, respectively: with I, $\varepsilon = 1.91 \cdot 10^4$ and pK = 5.95; with II $\varepsilon_1 = 1.77 \cdot 10^4$ and $\varepsilon_2 = 2.53 \cdot 10^4$; $pK_1 = 4.15$ and $pK_2 = 7.45$. The absorption

USSR

CHERKESOV, A. I., et al., Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya Tekhnologiya, Vol XIV, No 7, 1971, pp 999-1002

spectra of the molecular and ionic forms of the two reagents and their complexes with thorium are presented. Formulas are given for the complex formation process, and the mechanism of the reaction is discussed. The thorium complexes with the two reagents can dissociate with respect to some of the carboxyl groups. However, under conditions of constant acidity this has no effect on the optical properties of the solutions of the complexes, and the relations between the various forms of the complexes of one and the same composition remain constant. Thus, the molar absorption coefficients ϵ and pK of the provisional instability constants of the complexes were calculated by the Komar' method [N. P. Komar', Uch. zap., Vol 37, Tr. n.-i. in-ta khimii, Khar'kov University, No 8, 37, 1951].

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USSR

UDC: 621.315.592.778.4

ZAKHAROV, V. I., KONYAKINA, Z. F., MALIN, B. V.

"A Method of Photolithographic Treatment of the Surface of Plates"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, Apr 72, Author's Certificate No 333632, Division G, H, filed 29 Jul 64, published 21 Mar 72, p 211

Translation: This Author's Certificate introduces a method of photolithographic treatment of the surface of plates of semiconductor materials by using sequential registration of the plates with master patterns. As a distinguishing feature of the patent, mechanical damage to the elements in registration is prevented by forcing an inert gas between them to create a gap controlled by changing the gas flow with regard to temperature. The patent also covers a modification of this method distinguished by the fact that the master pattern is located on the surface of the plate at the instant of light exposure by creating a vacuum between the master and the plate.

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USSR

UDC 542.91:541.69:547.362:547.556.9

SHISHMAKOVA, T. G., BARDAMOVA, M. I., KONYASHEVA, N. V., KOTLYAREVSKIY, I. L., PERSHIN, G. N., and MIKERINA, A. L., Institute of Chemical Kinetics and Combustion, Siberian Branch Acad. Sci. USSR, and Chemical-Pharmaceutical Institute, Acad. Med. Sci. USSR

"Synthesis and Study of the Antimicrobial Activity of the Amino Derivatives of 4-Hydroxy-4'-ethynylazobenzene"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 72, pp 978-980

Abstract: 20 g of 4-Hydroxy-4'-acetylazobenzene (I) was refluxed for 8 hrs with 11.6 g K_2CO_3, 150 ml acetone, and 15.2 g allyl bromide, cooled, and poured into water. Solid material was obtained and after recrystallization from alcohol yielded 17.9 g 4-allyloxy-4'-acetyl-azobenzene (II), m. p. 130-132. (II) was hydrogenated over $Pd/CaCO_3$ to yield 4-propoxy-4'-acetylazobenzene (III), m.p. 117-120°. Chlorination of (III) followed by dehydrochlorination yields 4-propoxy-4'-ethynylazobenzene, m.p. 97-98°. Mannich condensation of that product yields 4-propoxy-4'-(piperidinopropyne-1"-yl-1")-azobenzene, m.p. 188-190°. However, the free hydroxy analogue -- 4-hydroxy-4'-ethynylazobenzene reacts only with difficulty via the Mannich condensation

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USSR

SHISHMAKOVA, T. G., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 72, pp 978-980

giving low yields of 4-hydroxy-4'-(morpholinopropyn-1"-yl-1")-azobenzene (VI), m.p. 250-253° and 4-hydroxy-4'-(piperidinopropyn-1"-yl-1")-azobenzene (VIII), m.p. 177-178°. (VII) showed a rather high antitubercular activity, surpassing (VI). Several analogues of (VII) were bioassayed, but none showed any activity. It was concluded that in order to have biological activity a compound must have a free hydroxyl group and a single triple bond.

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USSR

UDC 621.315.592

SHAPOCHANSKAYA, Z.V., KONYAYEV, S.I., KLYAUS, Kh.I.

"Capacitive Characteristics of a Thin-Film Switching Element Based on Selenium"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 822-824

Abstract: Experimental data are presented from a study of the capacitance of a thin-film switching element with a Ag-Se-Al structure as a function of illumination, variable voltage frequency, and fixed bias. The range of light wavelengths causing variation in capacitance of the illuminated specimen is determined, A model of a two-layer capacitor was used to interpret the results obtained. The observed variations in the capacitance can arise from the presence of a photodielectric effect and the presence of traps in the selenium.

The source of illumination used in the experiment was an incandescent lamp with a tungsten filament, and the illumination varied from 0 to 30,000 lux.

USSR

SHAPOCHANSKAYA, Z.V., et al, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 5, 1970, pp 822-824

The sharpest variation in capacitance was caused by a wavelength of 500-750 microns which corresponds to energies of 2.2-1.6 electron volts. It is pointed out that in the investigated Ag-Se-Al structure the selenium layer is an amorphous dielectric in which there can be regions absorbed by silver (possibly, Ag_2Se). This complex dielectric can be represented by an equivalent schematic of a two-layer capacitor. The formula for calculating the resultant capacity of this layer is presented, and its effect is interpreted by this mechanism.

2/2

Microelectronics

UDC: 621.316.5--416

USSR

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KONYAYEV, S. I. and KLYAUS, Kh. I.

"Thin-Film Commutation Element"

Moscow, Radiotekhnika i Elektronika, No 5, 1970, pp 1112-1113

Abstract: This article describes a metal-dielectric-metal device, made by vacuum deposition on an insulating substrate, providing a switching characteristic with a section of S-type negative resistance in the forward part of the volt-ampere characteristic and a section of N-type in the inverse part. This characteristic is shown in an accompanying oscillogram. The article offers experimental data obtained from research on the film, which uses indium for one electrode, aluminum for the other, and a SiO_x, Se system as the dielectric. An explanation is given of the film operation mechanism, which is connected with the migration of metallic ions under the influence of the electric field.

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USSR

UDC 537.312.62

VERESHCHAGIN, L. F., Academician, KONYAYEV, YU. S., BERZON, E. M., and VELLER, M. V., Institute of High-Pressure Physics, Academy of Sciences USSR, Akademgorodok, Podol'skiy Rayon, Moskovskaya Oblast

"Variation in the Superconducting Transition Temperature of Strained Niobium Stannide"

Moscow, Doklady Akademii Nauk SSSR, Vol 203, No 6, 1972, pp 1270-1271

Abstract: The authors subjected rods 1.5-3 mm in diameter made of Nb-Sn alloy (64 wt. percent Nb), containing Nb_3Sn as the principal phase, to plastic strain and studied the dependence of the superconducting transition temperature T_c on the amount of strain. The strain was applied on a two-stage hydroextrusion device in the 30-60 kbar extrusion pressure range with a counterpressure of 15-20 kbar. The strains reached $\varepsilon = 65$ percent. T_c was determined by the inductive method. It was found that there is already a sharp decrease in T_c at light reductions ($\varepsilon = 20$-30 percent) with a significant expansion of the transition range. An analysis of X-ray photographs taken

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USSR

VERESHCHAGIN, L. F., et al., Doklady Akademii Nauk SSSR, Vol 203, No 6, 1972, pp 1270-1271

by the powder method showed that with increased strain there is broadening of the interference lines and a decrease in their intensity.

To find how T_c is affected by stresses occurring during strain, a number of anneals of varying duration were carried out at 300-900° C. It was found that the anneals significantly increase the superconducting transition temperature. There is a 3-5 percent increase in the T_c of strained specimens after annealing at 900°. Annealing of the initial specimens does not cause any sharp change in T_c. The appearance of the X-ray photographs of all specimens annealed at temperatures up to 700° C does not change; beginning with 900° there is a decrease in the width and an intensification of the Ni_3Sn line intensity, indicating internal stress relief and possibly an increase in the tin content of the compound.

The authors thank Ye. S. Itskevich and V. A. Vlasov for affording the opportunity to perform the T_c measurements.

2/2

USSR

UDC: 53.07/.08+53.001.5

POLYAKOV, Ye. V., VERESHCHAGIN, L. F., KONYAYEV, Yu. S., Editorial Staff of the Journal "Pribory i Tekhnika Eksperimenta"

"Entropy Diagram and Indicator Chart for a 16 000-Bar Hydraulic Compressor"

Teplovaya i indikatornaya diagrammy gidravlicheskogo kompressora na 16 000 bar. AN SSSR (cf. English above. Academy of Sciences of the USSR), Moscow, 1971, 21 pp, ill., bibliography of 10 titles, No 3612-71 Dep. (from RZh--Fizika, No 4, Apr 72, Abstract No 4A132 DEP)

Translation: A study is made of entropy diagrams and indicator charts for a 16 000-bar hydraulic compressor. The curves were plotted by means of specially developed temperature and pressure pickups. The resultant graphs are used as a basis for drawing conclusions on the polytropism of processes of compression and expansion, the degree of perfection of the seals, and the effect of the clearance and nature of operation of the delivery valve on the productivity of a hydraulic compressor. Authors' abstract.

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UDC 547.26'118

USSR

IVANOVA, N. L., ZAVALISHINA, A. I., FURSENKO, I. V., NASONOVSKIY, I. S., KONYAYEVA, I. P., KOMLEV, I. V., NIFANT'YEV, E. YE.

"Chromatography of Organic Compounds of Trivalent Phosphorus in a Thin Sorbent Layer. II"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 91-93

Abstract: Some acids of phosphorus and their esters can be identified by the method of thin layer chromatography, but the chromatograms of such substances are not always sufficiently clear and the method of thin layer chromatography was not successful heretofore for analysis of the amides and other important types of derivatives of the acids of trivalent phosphorus [E. Ye. Nifant'yev, ZhOKh, No 35, 1980, 1965]. Here, a more detailed study has been made of the conditions of thin-layer chromatography of some of the most useful types of substances of this class. As a rule, aluminum oxide of second degree Brockman activity was used as the sorbent, but silica gel, polyvinyl alcohol and chlorated polyethylenes were also investigated. They gave worse results. The presented method of thin layer chromatography proved to be useful for analysis of medium and acid phosphites, thiophosphites, amides of phosphoric acid and amidophosphites and esters of hypodiphosphoric acid.

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USSR

KAGANOV, V. Yu., BLINOV, O. M., KONYASHIN, V. I., and CHUYKO, Yu. N., Moscow Institute of Steel and Alloys

"Investigation of the Possibility of Controlling Steel Composition by the Method of Thermoelectromotive Force"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 9, 1970, pp 171-174

Abstract: An investigation was made of the combined effect of C, Si, Mn, and Cr on the thermoelectric properties of steel relative to VR-5 thermoelectrodes and VR-5/20 thermocouples at various average temperatures of sample cooling. The experiments were conducted on cooling metal samples taken from the furnace at 1020°C to 740°C. A statistical model developed for the thermoelectric properties of Fe alloys can be applied to the process of ShKh15 steel production in the temperature range indicated above. The model makes it possible, if the chemical composition of the steel is known, to determine its thermoelectric properties, or, if the content of three admixtures is known, to determine the content of any fourth admixture (the deviation from the real value does not exceed ± 0.05%). The model also demonstrates the possibility of the simultaneous determination of chemical composition according to four admixtures.
1/1

USSR UDC 620.193.01

VODYANOV, YU. M., KONYAYEV, B. YA., and FALICHEVA, A. I., Voronezh Polytechnic Institute, Voronezh State Pedagogical Institute

"Effect of Ultrasound on Cathodic Processes on Iron and Nickel"

Moscow, Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 295-298

Abstract: The authors studied the effect of an ultrasonic field on cathodic reactions under aeration conditions and in an inert gas atmosphere, specifically the behavior of iron (0.08 percent C) and nickel (NP-2) in 1n. H_2SO_4 at 30°. There was found to be a shift in the corrosion potential of both metals and a significant increase in corrosion losses in the aerated acid with the application of the ultrasonic field. This is due mainly to an increase in the acid ionization rate as a result of intensive stirring of the solution. Under the action of ultrasound the self-dissolution rate of iron in the presence of air is about double that of nickel.

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USSR UDC 615.849.014.45:615.849.017:615.281

KOTLYAROV, L. M. and KONYAYEV, G. A., Institute of Biophysics, Moscow

"Study of the Antimicrobial Properties of Radioactive Injection Preparations in Relation to the Problem of Ensuring Sterility"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971, pp 5-10

Abstract: There are no rapid methods for checking the sterility of radioactive preparations, which should be shipped to the consumer within 18 to 24 hours after sterilization. Some of these preparations cannot withstand thermal treatment because of their physicochemical properties and indirect control is not always possible when other methods of sterilization are used. Study of some 20 of these compounds showed that a number possess bactericidal or bacteriostatic properties and are already sterile. For example, neohydrin (Hg^{203}, Hg^{197}), bromomercuroxypropane (Hg^{197}), sodium pertechnetate (Tc^{99M}), and radioactive preparations with benzyl alcohol in a 2% concentration have a marked bactericidal effect on a wide range of vegetative and spore forms of microorganisms and do not require additional sterilization. Bengal rose (I^{131}), iodognost (I^{131}), m - iodobenzoic acid (I^{131}), macroaggregates of albumin (I^{131}), zirconyl phosphate (P^{32}), sodium silicate, and radioactive

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R001401430005-3"

USSR

KOTLYAROV, L. M. and KONYAYEV, G. A., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, 1971, pp 5-10

preparations with 1% benzyl alcohol have pronounced bactericidal action and their sterility can be assured by combining them with substances or factors that help to destroy spores. Tables list the preparations studied, antimicrobial factor, and eight test microorganisms (St. aureus, E. coli, B. proteus vulgaris, B. subtilis, Cl. perfringens type A, B. anthracoides, and Torula utilis).

2/2

USSR UDC 621.326.77

KONYAYEV, S. I., KLYAUS, Kh. I., Institute of Mathematics, Siberian Department of the Academy of Sciences of the USSR

"A Method of Making Thin-Film Memory Elements"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 25, Soviet Patent No 277863, class 21, filed 7 Apr 69, published 5 Aug 70, pp 45-46

Translation: This Author's Certificate introduces a method of making thin-film memory elements based on Soviet Patent No 244398. As a distinguishing feature of the patent, the method is designed to improve the stability of the actuating threshold voltage, increase the amplitude of the actuating threshold voltage and commutating current, and shorten the technological cycle. To achieve these goals, an amorphous dielectric film is precipitated on a metal film in an atmosphere of elemental selenium.

1/1

USSR UDC 621.318.57

KONYAYEV, S. I., KLYAUS, Kh. I., MISHIN, A. I., Institute of Mathematics, Siberian Department of the Academy of Sciences of the USSR

"A Thin-Film Switching Element"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288152, class 21, filed 21 Apr 69, published 3 Dec 70, p 85

Translation: This Author's Certificate introduces a thin-film switching element with Ag-Se-Al structure. As a distinguishing feature of the patent, the number of stable states is increased by making the dielectric film with a stepwise variable thickness.

1/1

1/2 038 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--THIN FILM COMMUTATION ELEMENT -U-

AUTHOR-(02)-KONYAYEV, S.I., KLYAUS, KH.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 5, 1970, PP 1112-1113

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., MATERIALS

TOPIC TAGS--ELECTRODE, ALUMINUM, INDIUM, DIELECTRIC MATERIAL, SILICON DIOXIDE, METAL ION, ELECTRIC FIELD, THIN FILM SEMICONDUCTOR, VOLT AMPERE CHARACTERISTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0616 STEP NO--UR/0109/70/000/005/1112/1113

CIRC ACCESSION NO--AP0132776

UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0132776
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS ARTICLE DESCRIBES A METAL DIELECTRIC METAL DEVICE, MADE BY VACUUM DEPOSITION ON AN INSULATING SUBSTRATE, PROVIDING A SWITCHING CHARACTERISTIC WITH A SECTION OF S TYPE NEGATIVE RESISTANCE IN THE FORWARD PART OF THE VOLT AMPERE CHARACTERISTIC AND A SECTION OF N TYPE IN THE INVERSE PART. THIS CHARACTERISTIC IS SHOWN IN AN ACCOMPANYING OSCILLOGRAM. THE ARTICLE OFFERS EXPERIMENTAL DATA OBTAINED FROM RESEARCH ON THE FILM, WHICH USES INDIUM FOR ONE ELECTRODE, ALUMINUM FOR THE OTHER, AND A SIO SUBX, SE SYSTEM AS THE DIELECTRIC. AN EXPLANATION IS GIVEN OF THE FILM OPERATION MECHANISM, WHICH IS CONNECTED WITH THE MIGRATION OF METALLIC IONS UNDER THE INFLUENCE OF THE ELECTRIC FIELD.

UNCLASSIFIED

USSR

UDC: 621.315.592

ANDREYEV, V. M., BORODULIN, V. I., KONYAYEV, V. P., PAK, G. T., PETROV, A. I., PORTNOY, Ye. L., SHVEYKIN, V. I., Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences of the USSR, Leningrad

"Spatial Distribution of Heterolaser Emission"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1739-1748

Abstract: The paper presents the results of experimental and theoretical studies of the luminous field of emission from a heterolaser in the short range and long range zones for various thicknesses of the active region and outside dimensions of the cavity. The distribution of the luminous field on the mirror face of the cavity crosswise of the active region which was observed in the experiments can be satisfactorily described within the framework of a flat triaxial waveguide model. The angular distribution of heterolaser emission in the plane perpendicular to the heterojunction plane can be treated with a fair degree of accuracy as diffraction of a waveguide wave on the open end of a flat metal waveguide filled with a dielectric. The pattern of the long-range field is symmetric relative to the normal to

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ANDREYEV, V. M., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 9, Sep 72, pp 1739-1748

the mirror. The directions to the principal maxima are determined by the angle of refraction of the partial waveguide plane waves. Modes of increasingly higher orders are stimulated in the active region as its width is increased. The pattern of the short-range field (order of the mode) does not depend on either the cavity length or the pumping. In heterolasers with wide active regions, three-dimensional modes of total internal reflection are stimulated which impair the quantum efficiency and increase the divergence of emission. These modes can be suppressed by increasing the ratio L/l, TM modes being suppressed faster.

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USSR UDC 621.771

VERESHCHAGIN, L. F., GUREVICH, YA. B., DMITRIYEV, V. N., KONYAYEV, YU. S., and POLYAKOV, YE. V., Moscow

"High-Temperature Gas Extrusion of Metals"

Moscow, Fizika i Khimiya Obrabrabotki Materialov, No 4, Jul/Aug 72, pp 85-91

Abstract: An apparatus is described for extruding various materials at gas pressures to 10 kbars in the temperature range 20°-1000°C. The process of heating the blank under high gas pressures by passing a current through the blank was examined. Heating the preparations was shown to be feasible, with rates to 70°/sec, during which the deviation from a linear increase was not more than ±25°C. The amount of the initial heating of the gas was determined during its compression to 7 kbars in the apparatus. The processing of structural steels is feasible with the apparatus described.

USSR UDC 539.5.015

GUREVICH, YA. B., DMITRIYEV, V. N., KONYAYEV, YU. S., OSTROVSKIY, G. A., and ENTIN, R. I., Moscow

"Composite Strengthening of Steel by Hydroextrusion"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 71, pp 71-76

Abstract: An attempt is made to achieve high indicators of strength and ductility of structural steels by combination methods of strengthening: 1) thermomechanical treatment-strain aging of martensite and 2) treatment for an ultra-fine austenite grain-strain againg of martensite. Experiments were conducted using Cr-Ni-Si steels with a carbon content of 0.35% (steel A), 0.45% (steel B), and 0.50% (Steel C). Treatment consisted of austenization at 950°C, cooling to 850°C, rolling, water quenching, and tempering for one hour at 200°C (steel A) and 300°C (steel B). Steel C was treated to produce ultra-fine austenite by quenching from 900°C in oil, tempering for one hour at 200°C, repeated austenization in heating to 900°C at the rate of 100°/sec, water quenching and tempering for one hour at 150 and 300°C. Deformation of the martensite at room temperature was accomplished by hydroextrusion at pressures up to 25 kbar. From the heat treatments mentioned above the following mechanical properties were achieved.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R001401430005-3"

USSR

GUREVICH, YA. B., et al., Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 71, pp 71-76

	Tensile (kG/mm^2)	Yield (kG/mm^2)	Elonga- tion,%	Reduction in Area, %
Steel A	160	145	9	45
*Steel B	170-290	140-275	6-11	20-37
*Steel C	180-265	150-250	5-12	20-45

*Mechanical property ranges for steels B and C are the result of introducing variations in the heat treating modes.

Three figures, 2 tables, 7 bibliographical references.

2/2

1/2 - C29 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--DEFORMATION AGING OF MARTENSITE BY USING HYDROEXTRUSION -U-

AUTHOR-(05)-KURDYUMOV, G.V., VERESHCHAGIN, L.F., ENTIN, R.I., GUREVICH, YA.B., KONYAYEV, YU.S.

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL METALLOVED. 1970, 29(4), 869-73

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--METAL AGING, METAL DEFORMATION, METALLURGIC RESEARCH FACILITY, HYDROSTATIC EXTRUSION, MARTENSITE, ALLOY DESIGNATION, LOW ALLOY STEEL/(U)KHNMS LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0369 STEP NO--UR/0126/70/029/004/0869/0873

CIRC ACCESSION NO--AP0126124

UNCLASSIFIED

2/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0126124
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INVESTIGATIONS WERE PERFORMED ON STEEL OF THE KHNMS TYPE WITH A C CONTENT OF 0.45PERCENT, PREPD. BY OPEN INDUCTION SMELTING. WITH INCREASING DEGREE OF DEFORMATION THE STRENGTH AND THE YIELD POINT INCREASE. A "CRIT. DEGREE" OF DEFORMATION OF SIMILAR TO 5PERCENT IS OBSD. THEREBY, ABOVE WHICH THE INCREASE IN THE STRENGTH IS RELATIVELY SMALL. THE HIGHEST STRENGTH VALUES ARE OBTAINED UNDER THE CONDITIONS OF HYDROEXTRUSION OF MARTENSITE AND THE SUBSEQUENT NATURAL AGING AT ROOM TEMP. AS THE AGING TEMP. IS INCREASED, THE STRENGTH DECREASES, BUT THE EFFECT IS RETAINED EVEN AFTER AGING AT 400DEGREES. X RAY DIFFRACTION INVESTIGATIONS AND PRECISION D. MEASUREMENTS WERE EMPLOYED TO STUDY THE REASONS FOR THE SIMULTANEOUS INCREASE IN THE STRENGTH AND THE PLASTICITY OF THE STEEL. THE PREVIOUSLY OBTAINED RESULTS CONCERNING THE EFFECTIVENESS OF DEFORMATION AGING OF MARTENSITE UNDER HYDROEXTRUSION CONDITIONS WERE CONFIRMED. THE OPTIMUM TREATMENT CONDITIONS WERE ESTABLISHED. FACILITY: TSNIICHM IM. BARDINA, MOSCOW, USSR.

UNCLASSIFIED

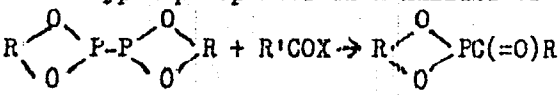
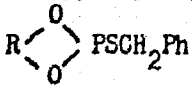
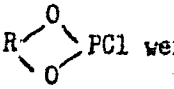
USSR

UDC 547.26'118

NIFANT'YEV, E. Ye., KOMLEV, I. V., KONYAYEVA, I. P., ZAVALISHINA, A. I., and TUL'CHINSKIY, V. M.

"Reactions of Hypodiphosphites with Acid Chlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2368-2373

Abstract: The reaction of neutral hypodiphosphites with halides of carboxylic acids proceeded according to  /R = C_6H_4 , $CH_2CH(CH_3)CH_2$; R' = Me, Ph; X = Cl, Br/. Upon the reaction of hypodiphosphites with benzylsulfenyl chloride $PhCH_2SCl$, benzyl thiol esters  of alkylenephosphorous acids /e.g., R = $CH_2CH(CH_3)CH_2$/ and chlorophosphites  were obtained. By reacting the hypodiphosphites with chlorophosphites or chlorophosphines, unsymmetric structures connected over a P-P group were synthesized.

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UDC 669.71:539.4

USSR

IVANOVA, V. S., KON'YEV, I. M., BUSALOV, YU. YE., and YERMISHKIN, V. A., Moscow

"Deformation and Rupture Characteristics of Composite Materials With Work Hardenable and Slightly Work Hardenable Matrix"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May/Jun 73, pp 116-121

Abstract: Resistance to deformation and rupture of an Mg-li (8 wt% Li) alloy reinforced with U8A steel wire was studied by a stepwise loading method. When the amount of steel wire was 1 volumetric percent, the Mg-Li alloy behaved as a matrix, but when the amount of steel wire was increased to 8-15% the behavior of the alloy was typical for metals with a body-centered cubic lattice. In other words, steel wire (fibers) determined the properties of the alloy. A generalized rupture scheme of the composite material is suggested together with the mechanical rheological model of the material behavior, taking into account the matrix deformation properties. Application of the additivity rule for computation of the parabolic strengthening coefficient of the composite material based on a nonhardenable matrix during deformation makes it possible to plot actual deformation curves of composite materials with different volumetric percentage of matrix. Using the deformation diagrams of the matrix

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IVANOVA, V. S., KON'YEV, I.M., BUSALOV, YU. YE., and YERMISHKIN, V.A., Moscow
Fizika i Khimiya Obrabotki Materialov, No 3, May/Jun 73, pp 116-121

fibers and composite material plotted in actual coordinates, it is possible to predict the nature of the fiber rupture and to determine the local deformation within its rupture zone. The parabolic strengthening coefficient, like the elasticity modulus, obeys the additivity rule for composite materials with a low-hardenable matrix.

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USSR UDC: 518.5:681.3.06

ZHDANOV, Zh. D., KONYKHOV, A. A., STRUFINSKIY, A. N.

"Operational Experience With the 'Dnepr-1' Universal Computer in a System for Control of Galvanic Production"

V sb. Kibernet. tekhnika. Vyp. 4 (Cybernetic Technology--collection of works, No 4), Kiev, 1970, pp 41-55 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V768)

[No abstract]

(2)

USSR UDC 632.95

ISMAYLOV, R. G. A., GUSEYNOV, D. M., MEKHTIYEV, S. D., SHCHEGOL', Sh. S., ISAYEVA, F. G. A., KONYSHEV, I. N.

"Plant Growth Regulator"

USSR Author's Certificate No 334961, Filed 30/07/69, Published 24/05/72 (Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract No 24N643 P, by T. A. Belyayeva)

Translation: It is suggested that the Na-salt of octyltoluic acid (I) be used as a plant growth regulator. I is produced by alkilation of xylenes with diisobutylene with subsequent oxidation of tert-octylxylene with O_2 and neutralization of the acid with an aqueous solution of NaOH or soda. The influence of I on the coleoptiles of wheat sprouts and the growth of winter wheat roots is demonstrated.

1/1

USSR

UDC: 621.771.3--868.1

SEVERDENKO, V. P., Academician, Belorussian Academy of Sciences, KLUBOVICH, V. V., and KONYSHEV, L. K.

"Computing Operating Stresses in Drag With Superposition of Longitudinal Ultrasonic Oscillations"

Minsk, Doklady Akademii nauk BSSR, Vol. 14, No. 9, 1970, pp 812-815

Abstract: The two methods most used for computing drag stresses in tubes and other devices with continuous circular profile are the method of characteristics and the method of averaged values. Using the latter, the authors find an expression for these stresses with longitudinal ultrasonic oscillations applied to the deformation focus. They begin their analysis by considering a small element of the surface of a solid consisting of two tubes of different diameter connected by a conical section. From this, they derive the equation of its equilibrium by assuming that the force of friction is proportional to the normal pressure. By using the curve

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USSR

SEVERDENKO, V. P., et al., Doklady Akademii nauk BSSR, Vol 14, No 9, 1970, pp 812-815

of the yield point for the tube metal plotted as a function of the amplitude of the ultrasonic oscillations, the drag stresses may be computed for particular cases through the equations derived. The authors are connected with the Physics-Technical Institute, Belorussian Academy of Sciences.

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PHYSICS
Acoustics

USSR UDC 621.778-861.1

SEVERDENKO, V. P., Academician of the Academy of Sciences BSSR; KLUBOVICH, V. V.; KONYSHEV, L. K.; REPIN, R. A., Physicotechnical Institute, Academy of Sciences BSSR

"Drawing of Wire From Strainproof Materials With the Application of Longitudinal Ultrasonic Vibrations"

Minsk, Doklady Akademii Nauk BSSR, Vol. 14, No. 5, May 70, pp 415-418

Abstract: Drawing of titanium, molybdenum, manganese nickel NMts 2.5, and stainless steel of various dimensions and different initial states was studied under the application of longitudinal ultrasonic oscillations and without them. The investigations were conducted on a testing machine with a drawing rate of 20--150 mm/min. The effectiveness of the action of acoustical energy on the metal being drawn was basically a function of the intensity of the ultrasonic oscillations applied to the deformation focus. The tests showed that a supply of ultrasonic energy to the deformation focus has a considerable effect on the force conditions of the drawing process. The relative drop in drawing force can reach 80%. A comparison of the drawing of wire from annealed and hardened

USSR

SEVERDENKO, V. P., et al, Physicotechnical Institute, Academy of Sciences BSSR

manganese nickel shows that the effectiveness of the action of ultrasonics on the drawing force somewhat increases with a growth in the degree of hardening. The effectiveness of the action of ultrasonic oscillations on the force conditions of the drawing changes with a change in the drawing rate. If the drawing force was 22 kg at a rate of 22 mm/min, the drawing force increased to 28 kg at a rate of 150 mm/min for the same intensities of the ultrasonic oscillations. It is also shown that if ultrasonic oscillations are applied in rolling, the breaking point of the metal drops somewhat and the plastic properties rise. This is attributed to a decrease in the shear and a partial softening of the metal during deformation under the action of the alternating stresses of the ultrasonic frequency.

2/2

1/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--EXOTHERMIC MIXTURE FOR STEEL POURING -U-

AUTHOR-(05)-ASTROV, YE.I., KLIPOV, A.D., KONYSHEV, V.I., LEYBOVICH, P.M., PAKHOMOV, N.A.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,329
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970 47(6)
DATE PUBLISHED--26JAN70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METALLURGIC PATENT, METALLURGIC PLANT, EXOTHERMIC PROCESS, SLAG, FOUNDRY TECHNOLOGY, STEEL MANUFACTURE PROCESS, FLUORITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1462 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126993

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AA0126993
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXOTHERMIC MIXT., FOR PREPG. SLAG DURING THE CASTING OF STEEL, HAS THE FOLLOWING COMPN. SILICOCALCIUM 25-35, CA,(NO SUB3) SUB2 OR KNO SUB3 5-15, FE CINDER 20-5, A SUBSTANCE CONTG. B OXIDES 1-10 WT. PERCENT, AND FLUORITE THE REMAINDER.
FACILITY: GORKOVSKIY METALLURGICHESKIY ZAVOD.

UNCLASSIFIED

USSR

(5)

UDC: 8.74

AL'PEROVICH, E. Ye., BATISHCHEV, D. I., BASALIN, P. D., BEDNAYA, R. I., KOROTCHENKO, A. G., KONYUGINA, L. A., KOLDORKINA, L. R., SERGEYEVA, N. M., SUKHAREVA, V. A.

"SAPPOR -- a System for Automating the Process of Making Optimum Decisions"

Moscow, Kibernetich. sistemy avtomatiz. proyektir.--sbornik (Cybernetic Automated Design Systems--collection of works), 1973, pp 29-35 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V633 by A. Doroshenko)

Translation: SAPPOR is a dialog system oriented for making optimum decisions in the process of designing technical devices. The system is realized on the BESM-3M computer with two memory arrays, the second being designed for operation of a screen panel. The software of the system is based on the modular principle and has the following modules: 1) "Model" -- for constructing the mathematical model of the object being designed. This block is replaceable and varies depending on the class of the object of optimization. In developing the SAPPOR, RLC circuits were taken as models. 2) "Formulation of the Problem" -- a compiler which prepares classes of problems formulated by the designer for

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USSR

(5)

AL'PEROVICH, E. Ye. et al., Kibernetich. sistemy avtomatiz. proyektir., 1973, pp 29-35

solution (calculating the characteristics of the object, optimizing the mathematical expectation in satisfying probability limitations, etc.). 3) "Method of Solution" -- a set of programs for finding the global minimum of an arbitrary curve, minimizing multiparameter functions and numerically solving problems in nonlinear programming. 4) "Check" -- enables following and controlling the process of finding the optimum with respect to information which may appear at the output (alphanumeric printer, screen panel) as ordered by the operator. 5) "Output of Results" -- gives the results of optimization in the form of graphs and tables on a screen panel or on paper with the use of an alphanumeric printer or a "Konsul" typewriter. The last four modules are universal and do not depend on the type of optimization object. An advantage of the SAPPOR is the possibility for operative search for the optimum decision and the combination of the designer's experience and intuition with rigorous mathematical methods. In this connection, the design process can be carried out without knowledge of computer programming and the corresponding methods of search optimization.

2/2

1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--THE ACTIVITY OF LIVER CATALASE AND ITS INHIBITOR IN PERSONS WHO DIED FROM ACUTE LEUKEMIA -U-

AUTHOR-(02)-KONYUKHOV, A.F., MAZURENKO, N.P.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49, NR 6, PP 49-50

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CATALASE, LIVER, LEUKEMIA, AUTOPSY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0704 STEP NO--UR/0219/70/049/006/0049/0050

CIRC ACCESSION NO--AP0131303

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131303

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACTIVITY OF WATER SOLUBLE LIVER CATALASE OF PERSONS WHO DIED FROM ACUTE LEUKEMIA AVERAGED ONE THIRD OF THE ACTIVITY OF LIVER CATALASE OF PERSONS WHO DIED FROM ACCIDENTAL INJURIES. ALCOHOL PREPARATIONS ISOLATED FROM THE LEUKEMIC HUMAN TISSUE BY THEIR INHIBITING ACTION ON WATER SOLUBLE LIVER CATALASE OF HEALTHY MICE WERE MORE ACTIVE THAN SIMILAR PREPARATIONS FROM CONDITIONALLY HEALTHY PERSONS. FACILITY: INSTITUTE OF EXPERIMENTAL AND CLINICAL ONCOLOGY OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR, MOSCOW.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--PRINCIPLES OF THE EXTRACTION OF GOLD OF VARIOUS PARTICLE SIZES FROM SAND ON A CONCENTRATION TABLE -U-

AUTHOR-(02)-ZAMYATIN, O.V., KONYUKOVA, A.T.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(2), 78

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GOLD, EXTRACTIVE METALLURGY, PARTICLE SIZE, SAND, ORE BENEFICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1920 STEP NO--UR/0136/70/043/002/0078/0078

CIRC ACCESSION NO--AP0108249

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108249

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXTN.OF AU OF PARTICLE SIZE SMALLER THAN OR EQUAL TO 0.25 MM WAS STUDIED AS A FUNCTION OF ITS PARTICLE SIZE. THE AU CONTENT IN THE MIXTS. WAS 80-500 MG-M PRIME3. IN NATURAL SANDS, THE AU WAS PRESENT IN THE FORM OF FREE PARTICLES, BOTH PLATELETLIKE AND LUMPY. IN A SMNTHETIC MIXT., THE AU WAS PRESENT AS ACICULAR AND MUSHROOMLIKE PARTICLES. THE AMT. OF AU EXTD. INTO THE CONC. WAS DETD. SUCCESSIVELY BY AMALGAMATION AND BY SAMPLE ANAL. ACCORDING TO THE PARTICLE SIZE CLASSES. THERE IS A DEFINITE RELATION BETWEEN THE SIZE OF THE AU PARTICLES AND THEIR EXTN., WHICH WITHIN THE LIMITS TESTED CORRESPONDS TO A LOGNORMAL INTEGRAL FUNCTION. THE PARTICLE SIZE OF AU, WHICH WAS 50PERCENT EXTD. (CRIT. SIZE) DURING ENRICHMENT OF A CONCN. TABLE, WAS CLOSE TO 0.05 MM. THE EXTN. OF COMPACT AU PARTICLES, AS COMPARED WITH ACICULAR AND MUSHROOMLIKE PARTICLES, IS GREATER IN ALL SIZE CLASSES. WITH DECREASING PARTICLE SIZE, THE EFFECT OF THEIR SHAPE ON THE EFFECTIVENESS OF THE EXTN. DECREASES. WHEN EMPLOYING TABLES FOR CONCN. OF SLIME MINERALS, INCLUDING AU, ONE SHOULD TAKE INTO CONSIDERATION THE POSSIBLE AU LOSSES OF PARTICLE SIZE SMALLER THAN 0.1-0.2 MM.

UNCLASSIFIED

NAVINTSC TRAN-3447-73

DEPARTMENT OF THE NAVY
NAVAL INTELLIGENCE SUPPORT CENTER
TRANSLATION DIVISION
4301 SUITLAND ROAD
WASHINGTON, D.C. 20390

a CR/4 [illegible]
b-OSI/PSB
EB

CLASSIFICATION: UNCLASSIFIED

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TITLE: Measuring the Oscillation Relaxation Time of the 00^01 Level of CO_2 Molecules in the Temperature Interval of 300° - 600°K

Izmereniye vremeni kolebatel'noy relaksatsii urovnya 00^01 molekuly CO_2 v intervale temperatur 300-600°K

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USSR

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"Thermoelastic Deformation of the Surface of a Solid Under the Action of a Laser Beam"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 5, 5 Mar 72, pp 248-250

Abstract: The article describes the behavior of the surface of a solid under the action of a continuous laser beam, where the result is distortion of the surface profile through thermoelastic deformations rather than surface failure. A continuously operating unimodal CO_2 laser was used as the radiation source, and the target was a fused quartz disk. It was found experimentally that under the action of laser radiation there is buckling of the surface of the irradiated solid at the place where the beam strikes. The authors thank F. V. BUNKIN and the late V. I. DANILOVSKAYA for valuable discussions.

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KONYUKHOV, V. K., MATROSOV, I. V., PROKHOROV, A. M., SHALUNOV, D. T., and SHIROKOV, N. N., Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR

"Continuous Gasdynamic Laser With a Mixture of Carbon Dioxide, Nitrogen, and Water"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 12, No 10, 20 Nov 70, pp 461-464

Abstract: This article reports that in a supersonic wind tunnel to which a heated mixture of carbon dioxide and nitrogen with a small quantity of water was blown there was observed an amplification of infrared radiation, and after installation of an optical resonator in the working portion of the tunnel a generation effect was obtained. Studies of the amplification coefficient of a supersonic flow (M = 4-5) were made in a wind tunnel described previously by the authors, with the difference that the gas expanded in a wedge-shaped nozzle with an angle of opening of 13° and a length of the supersonic portion of 5 cm. The stagnation temperature was 1000°K, the stagnation pressure was 5 atm, and the dimensions of the critical cross section were 1.5 x 100 mm. The probing ray of a single-mode, single-frequency CO_2 laser was directed parallel to the greater dimension of the

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KONYUKHOV, V. K., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 12, No 10, 20 Nov 70, pp 461-464

critical cross section and intersected the gas flow at the point of emission from the nozzle. A study of the change in the absorption coefficient and the amplification of the signal of the CO_2 laser with time showed that absorption in the gas flow decreases to zero and then amplification appears. Introduction of water molecules causes accelerated relaxation of the CO_2 molecules from the lower laser level as the gas flows in the supersonic portion of the nozzle. The amplification coefficient was measured as a function of water content in the mixture. Measurement of the amplification coefficient in this gas mixture was made at a frequency of 947.73 cm^{-1} and showed that inversion in the supersonic flow exists for the pair of levels (00°1)-(10°0) but the amplification coefficient amounts to $6 \cdot 10^{-4}$ cm^{-1} for a water concentration of 2.1%.

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KONYUKHOV, V. K., and PROKHOROV, A. M., Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR

"On the Possibility of Producing an Adsorption-Gasdynamic Laser"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13, No 4, 20 Feb 71, pp 216-218

Abstract: It is shown that nonequilibrium expansion in a supersonic jet of a two-phase gas-aerosol system can be accompanied by population inversion with respect to oscillatory levels of multiatomic anisotropic molecules, due to oscillatory relaxation of molecules in the adsorbed state on the surface of aerosol particles. It is noted that surface relaxation considerably broadens the choice of molecular gases in which it is possible to obtain population inversion by the gasdynamic method. It is assumed that the dependence of the average lifetime of a molecule in a two-phase gas-aerosol system on the type of oscillatory level at which the molecule is located is explained by the joint action of three factors: (1) a molecule on being adsorbed in oriented in a certain way relative to the surface of the adsorbent; (2) the damping of different oscillatory modes of the molecule depends on its orientation in the adsorbed state; (3) the time of stay on

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KONYUKHOV, V. K., and PROKHOROV, A. M., Pis'ma Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 13, No 4, 20 Feb 71, pp 216-218

the surface also depends on the orientation of the molecule. Expressions are derived for the time of stay of a molecule in the adsorbed state as a function of its orientation; and the damping of different oscillatory modes of a molecule, as a function of its orientation on the surface. The ratio of the lifetime τ_b of a CO_2 molecule in a two-phase system on the surface laser level to the average lifetime τ_H on the four lower levels is also obtained and shows that the lifetime of molecules on the lower levels is $1/\eta$ times shorter than the lifetime on the surface laser level. It is noted that in supersonic wind tunnels and in gasdynamic lasers there is a common reason for which flow in the supersonic portion becomes two-phase: the reason is the voluminal condensation of vapors of those substances which are contained in the form of small admixtures in the gas and which have considerable vapor pressure in comparison with the total pressure of the gas. The presence of aerosol particles in a gas flow then causes attenuation of the infrared radiation due to absorption and scattering by small particles.

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USSR

KONYUKHOV, V. K. (Lebedev Physics Institute, USSR Academy of Sciences, Moscow)

"Similar Gaseous Discharges for CO_2 Lasers"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, August 1970, pp 1649-1655

Abstract: The author develops a theory for like transformations of gaseous discharges for CO_2 lasers which includes thermal effects in the discharge and determines the distribution of particles by energy level. Like transformations are found for which the concentrations of all of the particles in the discharge vary proportionally but the speed of the charged and neutral particles remains constant. The basic characteristics of the active medium (the amplification factor and the density of the saturating field) vary in the same proportion.

The article includes two tables and eleven equations. There are 14 bibliographic references.

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KONYUKHOVA G.P.

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PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakova, 1970, Vol 70, Nr 3, pp 376-382

CHANGES OF CORRELATIONAL FUNCTIONS IN DIFFERENT TYPES OF CHANGED BRAIN BIOELECTRICAL ACTIVITY

Ye. A. Zhirmunskaya, G. A. Vaytenko, G. P. Konyukhova

The paper deals with the study of distant synchronization of the cortical neuron activity, appearing as a result of morphological connections of some brain areas with the others. The amount of periodical and accidental components of the coefficient of cross correlations in 2 simultaneously registered oscillating processes was measured. These measurement were performed from identical leads of the hemispheres or from different points of one hemisphere. It was demonstrated that these indices change quite differently in different types of EEG disorders.

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BIRGER, YE. S., KERBIKOV, B. O., KONYUKHOVA, N. B., and SHAPIRO, I. S., Institute of Theoretical and Experimental Physics of the State Committee on the Use of Atomic Energy (BIRGER, YE. S., now at Institute of Control Problems, and KONYUKHOVA, N. B., at Computer Center of the Academy of Sciences USSR)

"Bound Quasinuclear States of $2N2\bar{N}$ System"

Moscow, Yadernaya Fizika, Vol 17, No 1, 1973, pp 178-185

Abstract: The article shows that in the X-region there can be quasinuclear mesons which represent bound states of two nucleons and two antinucleons ($2N2\bar{N}$). The characteristic qualitative peculiarities of the bound states in the $2N2\bar{N}$ system are as follows:

1) The isospins of the four-particle mesons may reach values of I=2. Experimental data fail to contradict the presence of doubly charged mesons in the X-region;

2) The partial widths $\Gamma_{N\bar{N}}$ for four-particle meson decay over the $N\bar{N}$ channel should be much less than the corresponding widths of the

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quasinuclear two-particle resonances $N\bar{N}$. Therefore, the $2N2\bar{N}$ mesons can hardly appear as resonances in the antinucleon-nucleon scattering cross-section;

3) The cross-section for the generation of $2N2\bar{N}$ mesons in processes of the type $\pi+N \rightarrow X+N$ should, beginning with certain values, undergo a sharp exponential drop due to the reduced probability of the production of a correlated group from four particles with nonrelativistic relative velocities.

The mass and annihilation width spectrum is obtained for states with the quantum numbers $I^G(J^P)=2^+(4^+)$. One of the levels found has a width of 34 Mev and hence should be observed experimentally as a doubly charged meson in the X-region.

The authors thank O. D. DAL'KAROV and V. D. EFROS for useful comments.

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BIRGER, YE. S., KERBIKOV, B. O., KONYUKHOVA, N. B., and SHAPIRO, I. S., Institute of Theoretical and Experimental Physics of the State Committee on the Use of Atomic Energy (BIRGER, YE. S., now at Institute of Control Problems, and KONYUKHOVA, N. B., at Computer Center of the Academy of Sciences USSR)

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The authors thank O. D. DAL'KAROV and V. D. EFROS for useful comments.

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"On the Behavior of Solutions Inside and Outside a Stable Manifold of Certain Two-Dimensional Nonlinear Systems of Ordinary Differential Equations"

Moscow, Matematicheskiye Zametki, Vol. 8, No. 3, Sep 70, pp 285-295

Abstract: A nonlinear system of two first-order equations with an irregular singularity at infinity

$$t^{-r}x' = A(t)x + f(t, x) \quad (t_0 \leq t < \infty), \qquad (1.1)$$

is considered, where r is a nonnegative integer, $A(t)$ is defined and continuous on the real interval $[t_0, \infty)$ and has for $t \to \infty$ a given asymptotic representation

$$A(t) \sim \sum_{k=0}^{\infty} A_k/t^k.$$

It was shown earlier by the author that a one-dimensional manifold of solutions tending to zero at infinity existsand is given by the relationship

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$$x_2 = \gamma(t, x_1). \qquad (1.2)$$

A representation in the form of a one-parameter exponential series is obtained for the solutions of system (1.1) belonging to the manifold (1.2). A theorem is proved showing that the distance of a solution $x(t)$ from the stable manifold, as measured normal to the plane $x_2 = 0$, is an exponentially increasing function of t^{n+1}. The statement of the theorem is as follows: let a solution $x(t)$ not lie at $t = T$ on the manifold (1.2). Then, only if $|x(t)|$ remains small, $|\xi(t)|$ is an exponentially increasing function of t^{n+1}, i.e., there exist positive constants K, a, and δ such that

$$|\xi(t)| \geq K \exp(at^{n+1}) \quad (t \geq T),$$

only if $|x(t)| \leq \delta$ for $t \geq T$.

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1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--ELECTROCAPILLARY PHENOMENA IN INDIUM BISMUTH ALLOYS -U-

AUTHOR--KUZNETSOV, V.A., KONYUKHOVA, N.P., DUDINA, N.A.

COUNTRY OF INFO--USSR

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTROCAPILLARY PHENOMENA WERE STUDIED AT 450DEGREES BY USING AS ELECTROLYTE A EUTECTIC MIXT. OF LICL AND KCL. ADDN. OF BI TO IN LOWERED THE INTERFACIAL TENSION AND SHIFTED THE ZERO CHARGED POTENTIAL OF THE ALLOYS TOWARD THE POS. SIDE. AT POTENTIALS MORE NEG. THAN POSITIVE 0.2 V BI BEHAVED AS A SURFACE ACTIVE COMPONENT IN RELATION TO IN AND WAS ADSORBED ON THE SURFACES OF THE ALLOYS. AT POSITIVE 0.2 V THE INTERFACIAL TENSION IS INDEPENDENT OF THE ALLOY COMPN. AND THE ADSORPTION OF BI IS NIL. AT POTENTIALS MORE POS. THAN POSITIVE 0.2 V, IN BECOMES A SURFACE ACTIVE COMPONENT. THUS, THE CONCN. OF COMPONENTS IN THE SURFACE LAYER DEPENDS ON BOTH THE COMPN. OF THE ALLOY AND ON THE POTENTIAL, AND THEREFORE A CHANGE IN THE LATTER WILL CAUSE A CHANGE IN THE SIGN OF ADSORPTION. THE ZERO CHARGE POTENTIAL OF IN WAS NEGATIVE 0.52 V AND THAT OF BI NEGATIVE 0.18 V. THE RANGE OF COMPNS. WHERE A CHANGE IN COMPN. CAUSES A SHARP CHANGE IN INTERFACIAL TENSION IS CHARACTERIZED BY SHARP CHANGES OF THE ZERO CHARGE POTENTIALS. THIS INDICATES THAT THE ZERO CHARGE POTENTIALS ESSENTIALLY DEPEND ON THE COMPN. OF THE SURFACE LAYERS.

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